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in the following listed application(s) or patent(s) for which the issue fee has been paid.

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Respectfully Submitted,



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(12) **United States Patent**
Murakami et al.

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(54) **SEMICONDUCTOR DEVICE COMPRISING A THIN FILM TRANSISTOR COMPRISING A SEMICONDUCTOR THIN FILM AND METHOD OF MANUFACTURING THE SAME**

(75) **Inventors:** Satoshi Murakami, Kanagawa (JP); Jun Shunpei Yamazaki, Tokyo (JP); Jun Koyama, Kanagawa (JP); Mitsuaki Osame, Kanagawa (JP); Yukio Tanaka, Kanagawa (JP); Yoshiharu Hirakata, Kanagawa (JP)

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(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(58) **Field of Classification Search** 349/38; 257/72, 59, 98, 347, E29.151; 438/149, 479, 438/517

See application file for complete search history.

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(57) **ABSTRACT**

An object of the present invention is to provide a semiconductor device having high operation characteristic and reliability.

The measures taken are: A pixel capacitor is formed between an electrode comprising anodic capable material over an organic resin film, an anodic oxide film of the electrode and a pixel electrode above. Since the anodic oxide film is anodically oxidized by applied voltage per unit time at 15 V/min, there is no wrap around on the electrode, and film peeling can be prevented.

66 Claims, 33 Drawing Sheets

